NATIONAL WEATHER SERVICE INSTRUCTION 10-405
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Operations and Services
Fire Weather Services, NWSPD 10-4

FIRE WEATHER SERVICES TRAINING AND PROFESSIONAL DEVELOPMENT

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SUMMARY OF REVISIONS:
This directive supersedes NWSI 10-405, "Fire Weather Services Training and Professional Development" dated April 22, 2004. The following revisions were made to this instruction:

(1) Section 2a – Added prerequisites to S-591 course.
(2) Added Appendix – Guidelines for Teaching Interagency Courses

Signed 4/5/05
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Director, Office of Climate,
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Fire Weather Services Training and Professional Development

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1. Fire Weather Forecasters. Any NWS meteorologist producing any of the core suite of fire weather products needs to be trained as a Fire Weather Forecaster. Typically, this includes WFO core forecasters and dedicated fire weather staff. Forecasters must fulfill the following requirements in these areas to work as a Fire Weather Forecaster:

   a. Fire Weather and Wildland Fire Behavior Baseline Knowledge. Complete the NWS Fire Weather computer based learning module and S-290, Intermediate Wildland Fire Behavior (either by computer based training or residence course).

   b. Local Training. Complete local training as specified by the local and/or regional Fire Weather Program Leader. This training should focus on: (1) the effects of local terrain on fire weather parameters and fire behavior, with an emphasis on wind; (2) local fire weather forecast techniques; (3) local fire season climatology; and (4) Remote Automated Weather Stations (RAWS) observations (where available).

   c. Products and Services. Become familiar with all NWS fire weather products and services and become proficient in the preparation and dissemination procedures for those products. Read NWS Policy Directive 10-4 and associated instructions.

The Meteorologists-in-Charge (MICs) and the appropriate Regional Headquarters will be responsible for ensuring fire weather forecasters are properly trained. Forecasters should review the Fire Weather Annual Operating Plan and produce a significant number of fire weather products each year to remain proficient. Details on proficiency are left to Regional Headquarter's discretion.

2. Fire Weather Program Leaders. MICs of WFOs assigned the responsibility to provide fire weather services will designate a member of the staff as the Fire Weather Program Leader (FWPL). The MIC will ensure the FWPL is provided adequate time for personal training and professional development, staff training and professional development, and user-agency liaison and assistance activities.

The MIC and FWPL will be responsible for training and development of fire weather forecasters and assisting the IMETs (if one is assigned to the WFO) as necessary. (The FWPL does not need to be an IMET or vice-versa.) In addition to fire weather related training, the FWPL's duties may include developing and implementing new forecast products and techniques, and conducting climate and fire weather related studies. The extent of the duties of the FWPL will be determined by the depth of the local fire weather program requirements.

The FWPL will meet the following requirements in addition to those of the Fire Weather Forecaster (section one):

   a. Advanced Fire Weather and Wildland Fire Behavior. Complete the S-591 Fire Weather Forecasters Course as soon as possible. S-290, Intermediate Wildland Fire Behavior, and the Fire Weather COMET CBL (web-based version is sufficient) are prerequisites to the S-591 course. To learn more about wildland

fire behavior, completion of the S-390 (Introduction to Wildland Fire Behavior Calculations) course is recommended (but not required).

b. National Fire Danger Ratings System (NFDRS). At WFOs with an NFDRS program, the FWPL will acquire advanced knowledge of the National Fire Danger Rating System (NFDRS). This knowledge should include NFDRS history and purpose, details of its components or indices, how it is used by land managers, and its importance to local land management agencies. Training can be accomplished through self-study of S-491 course materials including the booklet "Gaining an Understanding of the National Fire Danger Rating System", the S-491 CD-ROM, and the NFDRS Reference Material CD-ROM.(WFOs in areas where the Canadian Forest Fire Danger Rating System is used may substitute training for this system in place of NFDRS.)

Regional Fire Weather Program Managers should also complete the requirements listed above for the WFO FWPLs.

3. Incident Meteorologists (IMETs) Certification and Training. The Office of Climate Water and Weather Services (through the National Fire Weather Program Manager) and the Regional Headquarters will ensure IMETs are properly trained and certified to work in an Incident Command System using the All Hazards Meteorological Response System (AMRS). Regional Fire Weather Program managers must ensure IMET meteorological support equipment familiarization is scheduled annually and designated IMETs in their regions remain certified.

3.1 Initial IMET Certification. To be certified initially as an IMET, the meteorologist will have at least attained the level of Journeyman Forecaster and will meet the following requirements in addition to all the requirements for FWPLs (section 2):

a. Advanced Fire Weather (IMET) Training. The IMET will acquire a high level of knowledge of fire weather meteorology and fire behavior. This includes: advanced knowledge of complex terrain and its impacts on fire weather parameters; mesoscale meteorology; intermediate to advanced knowledge of climatological patterns associated with fire activity; and intermediate to advanced knowledge of fire behavior, including knowledge of fuels and fire climatology.

b. Wildland Fire Behavior Calculations. The IMET will complete the S-390 Introduction to Wildland Fire Behavior Calculations Course to obtain knowledge of wildland fire behavior calculations. This course introduces fire behavior calculations by manual methods, provides basic skills in determining fire behavior through analysis of input data and interpretation of output data. In addition, the trainee will have a knowledge and familiarization of S-490, Advanced Wildland Fire Behavior Calculations, by reviewing the S-490 Student Reference Text and slides.

c. Incident Command System Orientation. The IMET will complete the I-100 Incident Command System Orientation workbook to acquire basic knowledge of

the Incident Command System organization, terminology, and common responsibilities.

d. Incident Training Assignment. The IMET will complete at least two incident (on-site) training assignments with certified IMETs. The first assignment should focus on incident familiarization and learning the appropriate IMET tasks. The second assignment should give the trainee a chance to demonstrate proficiency in these critical tasks under supervision of a certified IMET. Trainees will complete at least 10 days of on-site training combined between the two assignments (not including travel days). Demonstrating proficiency on IMET Task Book tasks may occur during both assignments, depending upon the trainee's progress and the judgement of the IMET trainer. Incident training will include: experience with dispatch and demobilization procedures and the Incident Command System; set up, use, disassembly, and packing of AMRS and Atmospheric Theodolite Meteorological Unit (now the ATMU); ordering and use of FireRAWS; preparation of on-site forecasts; briefing Incident team; and working and coordinating with local forecast offices. Upon successful completion of the training assignments, the certified IMET providing the training will sign-off on the IMET Task Book.

A trainee must be certified as a Fire Weather Forecaster (see section 1) before assignment for incident training. The trainee should also try to complete as many of the other IMET certification requirements (section 2 and 3) as possible before incident training, though it is recognized completion of some requirements are controlled by course schedules. Regional Fire Weather Program Managers will determine when trainees are ready for incident training and will coordinate this information with the National Fire Weather Operations Coordinator (NFWOC).

e. DirecWay Certification. Federal Communications Commission requires certification for installation of DirecWay (two-way satellite) equipment. This certification enables IMETs to use the DirecWay equipment on mobile assignments. Training will be offered at least once annually at the IMET workshop, and at other times as necessary.

The IMET's MIC is the final certifying official. He/she should coordinate with the Regional Fire Weather Program Manager and the NFWOC, and ensure all required courses, study, and tasks specified in 3.1 are complete before signing the Task Book. The MIC's signature on the Task Book denotes the official certification for the IMET.

3.2 IMET Re-certification. The status of IMETs certification will be reviewed annually by the respective Regional Headquarters and MICs prior to delivering the pre-season list of certified IMETs to the NFWOC (required by January 31st of each year). Delivery of IMET names to the NFWOC implies each IMET has met the ongoing re-certification criteria.

3.3.1 Re-certification Criteria. To remain certified as an IMET, the IMET must complete one of the following within the previous 18 months:

a. Respond to an incident dispatch as a certified IMET using the AMRS

b. Attend the annual National IMET Workshop

c. Complete annual equipment (AMRS, theodolite, FireRAWS) re-fresher training with another certified IMET, with the training approved by the IMET's MIC

3.3.2 Lapse of Certification. If a previously certified IMET does not meet the criteria in 3.3.1, re-certification can occur by completing either 3.3.1-b or 3.3.1-c, or by a dispatch training session at an incident with a certified IMET. For a dispatch training session, the certified IMET will determine the necessary length of dispatch for re-certification. The certified IMET must notify Regional Headquarters and the MIC if and when he/she deems re-certification should be approved. The IMET seeking re-certification does not have to formally complete a Task Book, but the required tasks should be reviewed for re-certification purposes. The respective Regional Program Manager or MIC should notify the NFWOC of any changes in IMET certification.

3.4 Optional IMET Training. Optional but highly recommended training for IMETs includes:

a. Advanced Wildland Fire Behavior Calculations. The IMET should attend the land management agencies residence S-490 Advanced Wildland Fire Behavior Course to further the knowledge of wildland fire behavior calculations obtained from reviewing the Student Reference Text. The residence course provides advanced skills in fire behavior analysis and prediction through the use of more complicated scenarios involving weather, terrain, and fuels.

b. Advanced Fire Behavior Interpretation. The IMET should attend the S-590 Advanced Fire Behavior Interpretation to obtain knowledge of the role of the Fire Behavior Analyst on an incident and to better understand the interaction of the IMET with the Fire Behavior Analyst.

c. Basic Incident Command System Course. The IMET should take the I-200 Basic Incident Command Course to acquire an understanding of the principles of the Incident Command System, including organizational structure, facilities, resource terminology, and the common responsibilities associated with incident assignments.

4. Course Information. Contact the appropriate Regional Fire Weather Program Manager for information on obtaining course materials, dates of residence classes, etc.

Appendices

Appendix A – Guidelines for Teaching Interagency Courses

1. The request for a NWS instructor for fire agency courses must come through the requesting agency. As with any other out-of-office training assignment, sufficient lead time of several months is needed for scheduling purposes and the request must be coordinated through the local Weather Forecast Office's Meteorologist-In-Charge. A charge code and/or resource order must be supplied by the requesting agency for reimbursable purposes if reimbursable expenses are anticipated.

2. The course should have a local, state, or federal land management instructor paid by that agency to team teach with the NWS instructor. The co-instructor cannot be from a private vendor or academic institution.

If 1 and 2 above are satisfied, then an instructor can be provided with all overtime and travel costs borne by the requesting agency. If 1 and 2 cannot be satisfied or it is unclear whether a local, state, or federal land management instructor has been provided, then go to #3.

3. The following questions must be asked by the Weather Forecast Office (WFO) to determine whether an NWS instructor can be approved for the course in question:

   a. Is the NWS instructor unique or can this course by taught by anyone else? Are other fire weather instructors (non-NWS) ready, willing and able to teach the course? Contact the Geographic Area Predictive Services meteorologist(s) for information concerning the availability of non-NWS fire weather instructors.

   b. If it is determined through coordination with the Geographic Area Predictive Services meteorologist(s) that non-NWS instructors are <u>not</u> ready, willing and able to teach the course, can the NWS be reimbursed for overtime and travel costs?

If it is determined by answers to questions 3a and 3b that an NWS instructor is appropriate and can be reimbursed, then the NWS instructor may teach the course.